WHAT IS CLAIMED IS:

1.   A method for searching for pilots in a wireless communication system, comprising:

searching over a designated code space for peaks in a received signal and providing a set of detected peaks;

forming a plurality of dwell windows for the detected peaks, wherein the dwell windows have sizes determined based on locations of the detected peaks in the designated code space; and

searching over the dwell windows for peaks in the received signal and providing a set of one or more candidate peaks.

2.   The method of claim 1, wherein the designated code space comprises phases for all or a portion of a pseudo-random noise (PN) sequence used to generate the pilots.

3.   The method of claim 1, wherein the forming includes

placing an individual search window on each detected peak, and

combining overlapping individual search windows.

4.   The method of claim 3, wherein the number of peaks to be returned for each dwell window is equal to the number of individual search windows combined to form the dwell window.

5.   The method of claim 3, further comprising:

sorting the detected peaks based on their locations in the designated code space.

6.   The method of claim 3, wherein the forming further includes

limiting the number of overlapping individual search windows to be combined for each dwell window.

7.   The method of claim 6, wherein the number of overlapping individual search windows combined for a particular dwell window is limited to the number of candidate peaks provided by the search over the dwell windows.

8.   The method of claim 6, wherein the overlapping individual search windows are combined such that overlap between dwell windows is minimized.

9.   The method of claim 6, wherein the overlapping individual search windows are combined such that larger detected peaks are biased toward the center of dwell windows.

10.   The method of claim 3, wherein the dwell windows are non-overlapping.

11.   The method of claim 3, wherein each individual search window has a particular size.

12.   The method of claim 11, wherein the size of each individual search window is 5 PN chips or less.

13.   The method of claim 3, wherein the individual search window is centered at each detected peak.

14.   The method of claim 1, wherein the dwell windows are formed such that each detected peak is included in only one dwell window.

15.   The method of claim 1, wherein the communication system is a CDMA system.

16.   The method of claim 15, wherein the CDMA system conforms to IS-95 or cdma2000 standard.

17.   A method for searching for pilots in a wireless communication system, comprising:
        searching over a designated code space for peaks in a received signal and providing a set of detected peaks;
        forming a plurality of dwell windows for the detected peaks by
                placing an individual search window of a particular size on each detected peak, and
                combining overlapping individual search windows, wherein the number of peaks to be returned for each dwell window is equal to the number of individual search windows combined to form the dwell window; and
        searching over the dwell windows for peaks in the received signal and providing a set of one or more candidate peaks selected from among the peaks returned for the dwell windows.

18.   A method for searching for pilots in a CDMA communication system, comprising:

2   performing a plurality of sets of searches for peaks in a received signal, wherein each set of searches is performed over a respective set of search windows, and wherein at least one set includes

4   search windows having variable sizes selected based on locations of expected peaks in the received signal.

19.   The method of claim 18, wherein variable number of peaks are returned for the

2   variable-size search windows.

20.   The method of claim 18, wherein a first set of search windows includes equal-size,

2   non-overlapping windows and covers a designated code space.

21.   The method of claim 18, wherein the variable-size search windows are formed by

2   combining overlapping fixed-size windows placed on peaks detected by a first set of searches.

22.   A demodulator in a wireless communication system, comprising:

2   a searcher operative to search over a designated code space for peaks in a received signal and to provide a set of detected peaks; and

4   a controller operative to form a plurality of dwell windows for the detected peaks, wherein the dwell windows have sizes determined based on locations of the detected peaks in the designated

6   code space, and wherein the searcher is further operative to search over the dwell windows for peaks in the received signal and to provide a set of one or more candidate peaks.

23.   The demodulator of claim 22, further comprising:

2   one or more finger processors operative to process and acquire the set of one or more candidate peaks.

24.   The demodulator of claim 22, wherein the controller is operative to

2   place an individual search window on each detected peak, and combine overlapping individual search windows to form the dwell windows.

25.   The demodulator of claim 22, wherein the designated code space includes phases for

2   all or a portion of a pseudo-random noise (PN) sequence used to generate pilots.

26.   A CDMA terminal device, comprising:

2   a searcher operative to search over a designated code space for peaks in a received signal and to provide a set of detected peaks; and

4   a controller operative to form a plurality of dwell windows for the detected peaks, wherein the dwell windows have sizes determined based on locations of the detected peaks in the designated

6   code space, and wherein the searcher is further operative to search over the dwell windows for peaks in the received signal and to provide a set of one or more candidate peaks.

        27.   The CDMA terminal device of claim 26, further comprising:

2   one or more finger processors operative to process and acquire the set of one or more candidate peaks.

        28.   The CDMA terminal device of claim 26, wherein the controller is operative to

2   place an individual search window on each detected peak, and

combine overlapping individual search windows to form the dwell windows.

        29.   The CDMA terminal device of claim 26, wherein the designated code space includes

2 phases for all or a portion of a pseudo-random noise (PN) sequence used to generate pilots.